

REMARKS

Claims 1-22 and 28-47 are pending in this application. Claims 1-22 and 28-47 are rejected. No new subject matter has been added. Claims 1, 2, 4-6, 28, 31, 40, 42 and 43 have been amended. Claims 1-22 and 28-47 remain pending. Reconsideration of the claims is requested in light of the following remarks.

Claim Rejections – 35 USC § 103**Stam in view of Cok: Claims 1-14 and 40-47**

Claims 1-14 and 40-47 are rejected under 35 USC 103(a) as being unpatentable over Stam et al. (US Application Publication 2002/0047624) (“Stam”), in view of Cok et al. (US Patent No. 6,320,325) “Cok.”

Claim 1 (Amended) recites:

A display system, comprising:

- a plurality of Light Emitting Diodes (LEDs) forming a display panel, at least some of the LEDs of the display panel capable of sensing and emitting light;
- a driving circuit to drive at least some of the LEDs;
- a sensing circuit to sense light received at some of the LEDs; and
- a switch coupled with the driving circuit, sensing circuit and some of the LEDs, to switch some of the LEDs from a sense mode to an emit mode.

Stam involves a lamp assembly incorporating optical feedback and focuses on correcting color shift. Stam discusses LEDs for generating white light with either multiple LED dies of different colors that in combination make white light, or an LED of a specific color that has a phosphor of a different color deposited on it that together make white light. The problem Stam is dealing with is different decay rates between the different dies or between the LED die of a specific color and the phosphor. These different decay rates result in a color shift. Stam discusses using a detector on a display to allow a feedback mechanism to adjust LEDs in response to the color shift. Stam mentions LEDs may be used as a detector and that LEDs can be reverse biased and operated as a photodiode to detect light from other LEDs of the same color.

Claim 1 includes a switch coupled with the driving circuit, sensing circuit and some of the LEDs, to switch some of the LEDs from a sense mode to an emit mode. Stam does not even discuss changing an LED from sensor/detector to emitter, or vice versa. It includes no circuitry and discusses no functionality to perform the switch. It simply states that an LED

can be used in either form, but not both. Therefore Stam does not teach this limitation from claim 1.

Cok involves an image display device, having a photosensor located on the display device and optically coupled to a representative light emitting pixel on the display device, and a feedback control circuit connected to the photosensor for modifying the light emitting display. Cok does not teach a switch coupled with a driving circuit, sensing circuit and some LEDs, to switch some of the LEDs from a sense mode to an emit mode. Therefore Cok does not cure the deficiencies of Stam. It is therefore submitted that claim 1 is patentably distinguishable over the prior art.

Claims 2-14 and 40-45 depend from claim 1. Since dependent claims necessarily contain the limitations of claims from which they depend, it is therefore submitted that claims 2-14 and 40-45 are also patentably distinguishable over the prior art.

Claim 46 includes in part an OLED display comprising *a plurality of diodes located in columns and rows, at least some of the plurality operable in both an emitting and a sensing mode*. Claim 46 is therefore patentably distinguishable over the prior art for the same reasons as claim 1 and its dependents. Claim 47 depends from claim 46. Since dependent claims necessarily contain the limitations of claims from which they depend, it is therefore submitted that claim 47 is also patentably distinguishable over the prior art.

Stam in view of Cok, further in view of Gu: Claims 15-16

Claims 15-16 are rejected under 35 USC 103(a) as being unpatentable over Stam in view of Cok as applied to claim 1, and further in view of Gu (US Patent Publication No. 2003/0052904) ("Gu").

Gu discusses embedding timing information along with other display control information in a signal using a pulse width modulation mechanism to controllably drive a display. Gu does not teach a switch coupled with a driving circuit, sensing circuit and some LEDs, to switch some of the LEDs from a sense mode to an emit mode. Therefore Gu does not cure the deficiencies of Stam in view of Cok.

It is therefore submitted that claims 15 and 16, since they depend from claim 1, are patentably distinguishable over the prior art.

Stam in view of Cok, further in view of Ogawa: Claims 17-19 and 41

Claims 17-19 and 41 are rejected under 35 USC 103(a) as being unpatentable over Stam in view of Cok as applied to claim 1, and further in view of Ogawa (US Patent No. 5,572,251) "Ogawa."

Ogawa discusses an optical position detecting unit and optical coordinate input unit. Specifically, Ogawa discusses an optical position detecting unit which includes an image pickup device having a pixel array region, an imaging lens for forming an image of a light-emitting point, a converging lens for converging light coming from the light-emitting point image formed by the imaging lens onto the pixel array region, a pattern member having a pattern which contains code information uniquely corresponding to the position of the light-emitting point and disposed on a path of light from the light-emitting point and at a position near the light-emitting point image, and a signal processing unit for extracting information of the position of the light-emitting point by using code information contained in an image of the pattern projected onto the pixel array region of the image pickup device on the basis of image data generated by the image of the projected pattern.

Ogawa does not teach a switch coupled with a driving circuit, sensing circuit and some LEDs, to switch some of the LEDs from a sense mode to an emit mode. Therefore Ogawa does not cure the deficiencies of Stam in view of Cok.

It is therefore submitted that claims 17-19 and 41, since they depend from claim 1, are patentably distinguishable over the prior art.

Stam in view of Cok, further in view of Forrest: Claims 20-22

Claims 20-22 are rejected under 35 USC 103(a) as being unpatentable over Stam in view of Cok as applied to claim 1, and further in view of Forrest et al. (US Patent Application Publication No. 2003/0213967) "Forrest."

Forrest discusses transparent contacts for organic devices. Forrest does not teach a switch coupled with a driving circuit, sensing circuit and some LEDs, to switch some of the LEDs from a sense mode to an emit mode. Therefore Forrest does not cure the deficiencies of Stam in view of Cok.

It is therefore submitted that claims 20-22, since they depend from claim 1, are patentably distinguishable over the prior art.

Stam in view of Mueller: Claims 28, 29 and 32-35

Claims 28, 29 and 32-35 are rejected under 35 USC 103(a) as being unpatentable over Stam in view of Mueller et al. (US Patent No. 6,016,038) "Mueller."

Claim 28 (Amended) recites, in part, a method comprising: at least one diode being both driven in a first portion of a display cycle and sensing light energy in a second portion of a display cycle.

Mueller discusses a multicolored led lighting method and apparatus. Specifically, Mueller discusses systems and methods relating to LED systems capable of generating light, such as for illumination or display purposes wherein light emitting LEDs may be controlled by a processor to alter the brightness and/or color of the generated light by using pulse width modulated signals. Mueller does not teach at least one diode being both driven in a first portion of a display cycle and sensing light energy in a second portion of a display cycle. Therefore Mueller does not cure the deficiencies of Stam.

It is therefore submitted that claim 28 is patentably distinguishable over the prior art. Claims 29 and 32-35 depend from claim 28. Since dependent claims necessarily contain the limitations of claims from which they depend, claims 29 and 32-35 are patentably distinguishable over the prior art.

Stam in view of Mueller, further in view of Scozzafava: Claims 30 and 31

Claims 30 and 31 are rejected under 35 USC 103(a) as being unpatentable over Stam in view of Mueller as applied to claim 28, further in view of Scozzafava et al. (US Patent No. 5,073,446) "Scozzafava."

Scozzafava discusses a multicolored led lighting method and apparatus. Specifically, Scozzafava discusses systems and methods relating to LED systems capable of generating light, such as for illumination or display purposes wherein light emitting LEDs may be controlled by a processor to alter the brightness and/or color of the generated light by using pulse width modulated signals. Scozzafava does not teach at least one diode being both driven in a first portion of a display cycle and sensing light energy in a second portion of a display cycle. Therefore Scozzafava does not cure the deficiencies of Stam in view of Mueller.

It is therefore submitted that claims 30 and 31, since they depend from claim 28, are patentably distinguishable over the prior art.

Stam in view of Mueller, further in view of Gu: Claim 36

Claim 36 is rejected under 35 USC 103(a) as being unpatentable over Stam in view of Mueller as applied to claim 28, and further in view of Gu.

Gu discusses embedding timing information along with other display control information in a signal using a pulse width modulation mechanism to controllably drive a display. Gu does not teach at least one diode being both driven in a first portion of a display cycle and sensing light energy in a second portion of a display cycle. Therefore Gu does not cure the deficiencies of Stam in view of Mueller.

It is therefore submitted that claim 36, since it depends from claim 28, is patentably distinguishable over the prior art.

Stam in view of Mueller, further in view of Ogawa: Claim 37-39

Claims 37-39 are rejected under 35 USC 103(a) as being unpatentable over Stam and Mueller as applied to claim 28, and further in view of Ogawa.

Ogawa discusses an optical position detecting unit and optical coordinate input unit. Specifically, Ogawa discusses an optical position detecting unit which includes an image pickup device having a pixel array region, an imaging lens for forming an image of a light-emitting point, a converging lens for converging light coming from the light-emitting point image formed by the imaging lens onto the pixel array region, a pattern member having a pattern which contains code information uniquely corresponding to the position of the light-emitting point and disposed on a path of light from the light-emitting point and at a position near the light-emitting point image, and a signal processing unit for extracting information of the position of the light-emitting point by using code information contained in an image of the pattern projected onto the pixel array region of the image pickup device on the basis of image data generated by the image of the projected pattern.

Ogawa does not teach at least one diode being both driven in a first portion of a display cycle and sensing light energy in a second portion of a display cycle. Therefore Ogawa does not cure the deficiencies of Stam in view of Mueller.

It is therefore submitted that claims 37-39, since they depend from claim 28, are patentably distinguishable over the prior art.

CONCLUSION

For the foregoing reasons, reconsideration and allowance of claims 1-22 and 28-47 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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